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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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In re Patent Application of:  
Mark L. Ernest et al.

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Art Unit: 3623

For: AUTOMATED INFORMATION  
TECHNOLOGY MANAGEMENT SYSTEM

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Examiner: B. Van Doren

**SUPPLEMENTAL APPEAL BRIEF-REVISED SECTION ENTITLED:**  
**“SUMMARY OF CLAIMED SUBJECT MATTER”**

MS Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In response to the Notice of Non-Compliant Appeal Brief mailed on October 25, 2006, the undersigned hereby submits the attached revised section entitled: “Summary of Claimed Subject Matter” to replace section with the same title in the Supplemental Appeal Brief previously filed on August 11, 2006.

Dated: November 27, 2006

Respectfully submitted,

By /Myron K. Wyche/  
Myron K. Wyche, Reg. No. 47,341  
CONNOLLY BOVE LODGE & HUTZ LLP  
1990 M Street, N.W., Suite 800  
Washington, DC 20036-3425  
(202) 331-7111  
(202) 293-6229 (Fax)  
Attorney for Applicant

## V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The present invention is a system and process for managing information technology (IT) hardware and software infrastructures that collects transaction information on a component basis. In particular, the process and system of the present invention permits real-time monitoring of operational level values (e.g., data usage, business value) within an IT system. These value-generating factors are ultimately used to make automated tactical and strategic decisions based on predetermined criteria for the values. The subject matter of the independent claims is linked to the drawing figures and “reference titles” of the drawing figures in the following paragraphs.

With respect to independent claim 1, the invention is a computerized process for managing an integrated IT system having a plurality of components (see FIG. 2 and FIG. 3: “Mainframe,” “Server 1,” “Router 123,” etc.) and providing a plurality of services, the process comprising the steps of: collecting, at each of the components, usage data indicating an amount of use each component receives in providing each of the services (see FIG. 3: “intelligent agents”); reporting the usage data of each component for each service (see FIG. 5: “report” outputs); constructing a valuation function for valuing each service (see FIG. 2: “e-Mail,” “ATM,” “Wire Transfer,” etc); correlating each service with each component (see FIG. 2 and FIG. 3: “Mainframe,” “Server 1,” “Router 123,” etc.) used to provide said service; and determining from said correlated services and components a value of each component and a value to said IT system (see FIG. 4: “e-Mail,” “ATM,” “Wire Transfer,” etc; “total value”).

In accordance with independent claim 10, the invention is a system for managing an IT infrastructure having a plurality of components (see FIG. 2 and FIG. 3: “Mainframe,” “Server 1,” “Router 123,” etc.) for providing a plurality of services, said system comprising: an agent associated with each of the components, said agent identifying each transaction of a service performed by said IT infrastructure (see FIG. 3: “intelligent agents”); and an information collection system for collecting from said agents transaction information relating to each service performed, said system determining from said transaction information which of said components are involved in said transaction (see FIG. 3: “intelligent agents” and FIG. 5).

With regard to independent claim 12, the invention is a system for managing an IT infrastructure comprising: an information technology process model which defines a plurality of groups of processes defining information flow for an integrated management model defining the IT infrastructure for a plurality of IT services (see FIG. 1); and a plurality of agents for monitoring each component of said IT infrastructure, said agents collecting transaction information identifying each transaction by service type (see FIG. 2: “e-Mail,” “ATM,” “Wire Transfer,” etc.; FIG. 3: “intelligent agents”); wherein said agents reporting over said IT infrastructure transaction information to said information process model whereby said information is used by said model (see FIG. 1, FIG. 2 and FIG. 5). The details of the contents of each of the figures referenced in the independent claims above is further discussed in the following paragraphs with references in the footnotes are to the text of the published application (i.e., U.S. Patent Publication No. US2004/0088456).

FIG. 1 illustrates an information technology process model.<sup>1</sup> The process model defines a set of eight different groups of processes; each of which is decomposed into more detailed processes, containing numerous processes that are integrated by object flows to define an integrated management model.<sup>2</sup>

FIG. 2 shows business values that are based on the revenue and cost associated with each service of the IT infrastructure.<sup>3</sup> The business values may be determined precisely based on the monetary value of each transaction, total dollar value of the transaction, or it could be generalized based on transaction types (i.e., an approximated value for a class of services such as e-mail or on-time billing).<sup>4</sup> In this way, the value of the components to the system can be

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<sup>1</sup> U.S. Patent Application Publication No. US 2003/0088456 at FIG. 1; page 2, paragraph [0012].

<sup>2</sup> *Id.* at FIG. 1; page 2, paragraph [0017].

<sup>3</sup> *Id.* at FIG. 2; page 2, paragraph [0013].

<sup>4</sup> *Id.* at FIG. 2; page 4, paragraph [0089], lines 20-29.

determined based on the value of the services performed. The value of the component to the system is shown in FIG. 2 as the sum of its values for each of the services provided.<sup>5</sup>

FIG. 3 illustrates the components of an exemplary IT infrastructure that includes a mainframe computer **11** that is interconnected with a DASD **12**, printer **15**, servers **16-17**, routers **18-19**, data terminals **21** and data transfer device **22**.<sup>6</sup> Associated with each of the components **11, 12, 15-17, 18, 19, 21, 22** of the IT system is at least one agent **24**.<sup>7</sup> The at least one agent **24** runs on a dedicated processor associated with each of the components and identifies each transaction in each service in which a respective component participates.<sup>8</sup> In accordance with the present invention, the business value of each service is allocated to the component for each business function requesting a service.<sup>9</sup> Further, the agents **24** of FIG. 3 report data identifying each transaction in which a related component or software of the system participated.<sup>10</sup> The data is reported over the network of the IT structure to a computer which defines the model.<sup>11</sup>

FIG. 4 provides a table that helps demonstrate the total value of the service to the business entity. In particular, the data of FIG. 4 identifies an IT infrastructure with a total value of \$26,072.86.<sup>12</sup> As discussed above, the valuations are based on the type of transaction (e.g., “ATM,” “e-Mail,” “Wire Transfer,” “Catalog Order,” “On-time billing”) wherein some transactions have a low value/transaction, while others, such as wire transfers, have a very high valuation base on a total revenue valuation.

Further, the information shown in FIG. 4 may then be used by the system evaluators to plan on and manage system upgrades which can be justified with such data.<sup>13</sup> For example, services returning a high valuation can then be expanded or upgraded with additional components. Based on the type of transaction, and participation of individual components in the

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<sup>5</sup> *Id.* at FIG. 2; page 4, paragraph [0091].

<sup>6</sup> *Id.* at FIG. 3; page 4, paragraph [0089], lines 1-8.

<sup>7</sup> *Id.* at FIG. 3, reference **24**, page 4, paragraph [0089], lines 9-14.

<sup>8</sup> *Id.* at FIG. 3, page 4, paragraph [0089], lines 9-14.

<sup>9</sup> *Id.* at page 4, paragraph [0089], lines 15-18.

<sup>10</sup> *Id.* at page 4, paragraph [0089], lines 15-18.

<sup>11</sup> *Id.* at page 4, paragraph [0092], lines 3-4.

<sup>12</sup> *Id.* at page 4, paragraph [0092], lines 5-6.

<sup>13</sup> *Id.* at page 4, paragraph [0092], lines 10-12.

transaction, it is possible to plan system upgrades to components by taking into account their relative value to the system.

In FIG. 5, each agent **24** periodically reports the accumulated data related to a component on which it is installed to a Sustain Service Delivery Capability process **A64**.<sup>14</sup>

The Sustain Service Delivery Capability Process **A64** accumulates the data from the agents **24** and creates the tables of FIGS. 2 and 4 discussed above. These reports are provided to the Establish IT Value process **A31**.<sup>15</sup> The accumulated data is also utilized by tactical processes such as Manage Performance and Capacity **A76**, Manage Problems **A77**, and Manage Availability **A72**.<sup>16</sup> The accumulated data is also offloaded to the Manage IT Assets and Infrastructure processes **A84**, which is responsible for initial valuation judgments.<sup>17</sup> This process is responsible for making tactical decisions regarding the replacement of equipment exhibiting higher than average failure rates, upon recommendations from the problem management process **A77**, or insufficient capacity to maintain adequate performance levels, as recommended by the capacity planning process **A76**.<sup>18</sup>

Decisions to replace equipment are then sent on to Procure Services and Components process **A82**.<sup>19</sup> However, rather than a purely technical decision, involvement of these processes allows the decision to be based on business valuation, according to a return-on-investment model.<sup>20</sup> The pricing and billing for customer usage is done by process **A83**, can be made much more granular, based on actual usage of infrastructure components reported by the agents **24** and the subsequently determined business value.<sup>21</sup>

These business rules, created by the Establish IT Value process **A31**, but developed from operational data, would also be made available to process group **A5**, Deploy Solutions.<sup>22</sup> As

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<sup>14</sup> *Id.* at FIG. 5; at page 4, paragraph [0093], lines 2-6.

<sup>15</sup> *Id.* at FIG. 5; at page 4, paragraph [0094], lines 6-7.

<sup>16</sup> *Id.* at FIG. 5; at page 4, paragraph [0094], lines 8-10.

<sup>17</sup> *Id.* at FIG. 5; at page 5, paragraph [0094], lines 12- 14.

<sup>18</sup> *Id.* at FIG. 5; at page 5, paragraph [0094], lines 14- 20.

<sup>19</sup> *Id.* at FIG. 5; at page 5, paragraph [0094], lines 20- 22.

<sup>20</sup> *Id.* at FIG. 5; at page 5, paragraph [0094], lines 23- 25.

<sup>21</sup> *Id.* at FIG. 5; at page 5, paragraph [0094], lines 25-29.

<sup>22</sup> *Id.* at FIG. 5; at page 5, paragraph [0095], lines 1- 4.

with problem management, the urgency of change requests for critical components can be modified based on these new business rules, as could the schedule for when changes are introduced.<sup>23</sup> Based on predictive analysis of operational data, change requests could be accelerated or deferred in order to reduce the risk associated with such changes.<sup>24</sup> Finally, the accumulated data is made available to remaining processes in Group **A3** the Manage IT Value set of processes, where it is utilized for strategy level decisions.<sup>25</sup>

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<sup>23</sup> *Id.* at FIG. 5; at page 5, paragraph [0095], lines 4- 7.

<sup>24</sup> *Id.* at page 5, paragraph [0095], lines 7-10.

<sup>25</sup> *Id.* at page 5, paragraph [0097], lines 1- 3.